

Work Order ID 82114

82114

Page 1

March-22-12 4:33:09 PM

Item ID: D407-667-205

Accept

N900040100

Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Crosstube Aft

Start Date: 22/03/2012 Start Qty: 1.00

1

Cust Item ID:

Required Date: 05/04/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: MLJ

Date: 12/03/22 Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D407-667-245	Rev F/DEO								
100		0.00							
100	DOCUMENT CONTROL								
DC	Memo	0.00							
Document Control	Photocopy bluefile and create labels as per PPP D407-667-205 CH0007								
110		0.00							
110	Pick Kit								
Packaging	Packaging	0.00							
Packaging	Memo								
120		0.00							
120	BENDING MACHINE - CROSSTUBES								
CNC Bend 1	Memo	0.00							
CNC Delta 100 Bender	1-Bend tube as per Dwg D407-667-245 using CNC bender program 407 Aft and Folio 21								

Handwritten notes:
 45008 JB / 8/2/2012 12/05/11 JB
 Cor MLJ 12-5-11

Handwritten notes:
 12/05/11 JB
 DP 12-5-2

Handwritten notes:
 DP 12-5-2

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Required Date: 05/04/2012 Req'd Qty: 1.00

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Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

130

QC15- Crosstube Dimensional Check

0.00

130

QC

Memo

0.00

8.7/5/12

Quality Control

W/O:		WORK ORDER CHANGES					
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Page 3

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QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140	Crosstubes	0.00							
140									
Crosstubes									
Crosstubes									
	Memo	0.00							
	1-Drill pilot holes in tube using drill Jig DT8583 & DT8584 as per Dwg D407-667-245. Drill all (3) top holes.								
	2-Drill and Ream all holes in tube to finish size using drill Jig DT8583 & DT8584 as per Dwg D407-667-245. Check dimensions between holes on all four sides.								
	3-Flip tube and switch drilling Jigs from right to left, left to right. Locate Jigs off existing holes using "T" pins.								
	4-Drill pilot holes using drill Jig DT8583 & DT8584 as per Dwg D407-667-245. Drill only the top (2) holes.								
	5-Drill & ream the top (2) holes to finish size using drill Jig DT8583 & DT8584 as per Dwg D407-667-245								
	6-Drill Aft rivet holes using drill Jig DT8789 as per Dwg D407-667-245. Note: Aft side has 3x top holes.								
	7-Drill Fwd rivet holes using drill Jig DT8789 as per Dwg D407-667-245. Drill only the top (3) holes.								
	8-C'sink holes as per Dwg D407-667-245. Allow rivet to sit below surface to compensate for paint.								
	9- Scribe tube to identify on the inner chamfer in the cuff D# and B#								
	10-Deburr & Inspect for surface damage. Repair damage within limits as per								

MO/RM 12-5-3

MO

12-5-3

W/O:		WORK ORDER CHANGES					
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Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
	Dwg D407-667-245								
150	Crosstubes Chemical Conversion	0.00							
150									
HandFXtube	Memo	0.00							
Hand Finishing Crosstubes									
160	QC3- Inspect Part Finish	0.00							
160									
QC	Memo	0.00							
Quality Control									
170	QC5- Inspect part completeness to step on W/O	0.00							
170									
QC	Memo	0.00							
Quality Control									

MD 12-5-3

S. 2/25/12 S. 2/25/12

S. 2/25/12 S. 2/25/12

W/O:		WORK ORDER CHANGES					
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Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

180

Outsource process - NDT per QSI038 4.1

0.00

180

Outsource2

Memo

0.00

Outsource process - NDT

Liquid Penetrant Inspection as per QSI 0380
Issue P/O **16903** LPI as per ASTM 1417
Level 2 Attach copy of NDT results to work order

12-05-4

190

Packaging

0.00

190

Packaging

Memo

0.00

Packaging

Ensure copy of NDT results attached to work order.

Px

SP 12-5-4

200

QC5- Inspect part completeness to step on W/O

0.00

200

QC

Memo

0.00

Quality Control

12-05-04 ①

W/O:		WORK ORDER CHANGES					
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Page 6

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Stop ***NR2***

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

210

210

SprayPaint

Spray Painting

SprayPaint

0.00

Memo

0.00

Mask underside of crosstube as shown

1-Prime inside and outside crosstube as per DEO D407-667-245 and QSI 005 4.2

2-Paint outside crosstube with White Imron as per QSI 005 4.2

PRIME: 121334

Start Time: 7:00

Finish Time: 8:00

PAINT: 121625

Start Time: 3:45

Finish Time: 4:30

clear: 121625

start: 3:30

Finish: 4:30

★ CLEAR COAT PER
ATTACHED INSTRUCTION
CP 12.05.04

220

220

QC

Quality Control

QC14- Inspect Spray Paint

0.00

Memo

0.00

Then, Wrap in plastic bag to protect from scratches

12-5-7

12.05.08 (1)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

230

230

Crosstubes

Crosstubes

Crosstubes

0.00

Memo

0.00

1- Install chafing shield as per DEO D407-667-245. Top holes should be facing up.

A/R Proseal 890 Batch: 121267
EXP: 11/12

2- Lightly scuff the bonded area using a 320 grit sand paper and clean the area with 41058 wash 'n' wipe

3- Install support with Scotch-Weld DP460 and install clamps as per DEO Dwg D407-667-245 using installation jig DT9025. Torque clamps as per dwg

A/R Scotch-Weld DP460 Batch: 120398
EXP: 17 Mar 2013

4- Install nut plates as per Dwg D407-667-245. Touch-up rivet heads with Imron paint.

12-5-10

240

240

QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

11 12.05.11

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Page 8

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Cust Item ID:

Required Date: 05/04/2012 Req'd Qty: 1.00 ***1***

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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

250

Pick Kit

0.00

250

Packaging

Memo

0.00

Packaging

12/05/11 JB

260

QC4- 100% Inspect kits for completeness

0.00

260

QC

Memo

0.00

Quality Control

8-21-11

TH

270

Packaging

0.00

270

Packaging

Memo

0.00

Packaging

Identify and in kanban rack
Location: S3

Rev 4

OK

12/5/11

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Work Order ID 82114***82114***

Page 9

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NS1

Revision ID:

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Start Date: 22/03/2012 Start Qty: 1.00

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Cust Item ID:

Required Date: 05/04/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start

NR1

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

280

QC21- Final Inspection - Work Order Release

0.00

280

QC

Memo

0.00

Quality Control

12/5/14
MW 12/05/15

W/O:		WORK ORDER CHANGES					
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Picklist Print

March-22-12 4:33:14 PM

Page 1

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Parent Item: D407-667-205

D407-667-205

Parent Item Name: Crosstube Aft

Start Date: 22/03/2012

Required Date: 05/04/2012

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:C 05.09.02 Add holes for compatibility with Bell SkidtubesKJ/JLM
IPP Rev:D Added Magnobond,Rubber Cushion & Clamps 07-02-19
JLM

****CHANGE TO CHG 005 - IF USING D2894-1 B35578 OR GREATER****

IPP Rev:E 08-05-22 add comment in seq. 6 and QC15 and QC5 DD verified
by:EC

IPP Rev:F 08-06-12 add comment in seq. 24 DD verified by:EC

IPP Rev:G 08-08-19 revE as per dwg DD verified by:EC

IPP Rev H 09.01.06 ECN 08-562 EC verified by:DD IPP Rev:I

10.04.07 revise route seq. in bom DD verified by:JLM IPP Rev J 11.04.26

removed abrasion strip ecn 11-551 EC verified

by:DD

IPP REV:K

11.10.03 DEO D407-667-245-F-2 DD verf:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D407-667-205TRN

Manufactured

No

110

Each

2.0000

1

1

D407-667-205TRN

**

Crosstube Turning Detail

Location

Loc Qty

Loc Code

LG

79744

79745

2

1

1

230

Each

0.0000

18

18

AN960JD516

NAS1149D0563J

Purchased

No

AN960.ID516

**

Washer

D2873-043

Manufactured

No

230

Each

20.0000

2

2

D2873-043

**

Nut Plate Assembly

Location

Loc Qty

Loc Code

LG052

72644

80228

20

2

18

W/O:		WORK ORDER CHANGES					
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Page 2

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Parent Item Name: Crosstube Aft

82114

D407-667-205

Start Date: 22/03/2012

Required Date: 05/04/2012

Start Qty: 1.00

Required Qty: 1.00

D2873-045

Manufactured No

230

Each

13.0000

2

2

D2873-045

Nut Plate Assembly

**

(2)

AP 12-5-10

Location

Loc Qty

Loc Code

LG052

13

80162

13

D2894-1

Manufactured No

230

Each

5.0000

1

1

D2894-1

2.750 Support

**

W 12-05-08

Location

Loc Qty

Loc Code

LG052

5

75212

5

D3190-1

Manufactured No

230

Each

49.0000

2

2

D3190-1

Chafing Shield

**

AP 12-5-10

Location

Loc Qty

Loc Code

LG053

23

75947

23

LG055

26

72576

26

(2)

W/O:		WORK ORDER CHANGES					
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D407-667-205

Parent Item Name: Crosstube Aft

Start Date: 22/03/2012

Required Date: 05/04/2012

Start Qty: 1.00

Required Qty: 1.00

D3595-063-450

Manufactured No

230

Each

130.1095

2

2

D3595-063-450

RUBBER CUSHION

**

12.05.08

80161

Location

Loc Qty

Loc Code

LG051

88

80161

88

MAT052

42.109474

67353

2

68893

6

70113

0.56

71354

0.2

74113

0.349474

75597

1

77678

32

MS20601-AD4W8

Purchased

No

230

Each

162.0000

14

14

MS20601-AD4W8

RIVET

**

91322 121255

Location

Loc Qty

Loc Code

LG051

162

121017

162

MS21920-22

Purchased

No

230

Each

80.0000

4

4

MS21920-22

Clamp(per MIL-DTL-8783C)

**

12-5-10

Location

Loc Qty

Loc Code

LG

14

119545

14

LG050

66

116207

7

117506

1

118186

8

120631

50

March-22-12 4:33:14 PM

Shop Packet Print

Page 3

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D407-667-205

Start Date: 22/03/2012

Required Date: 05/04/2012

Start Qty: 1.00

Required Qty: 1.00

MS21920-25

Purchased

No

230

Each

161.0000

2

2

MS21920-25

Clamp(per MIL-DTL-8783C)

**

W 12.05.08

Location

Loc Qty

Loc Code

LG050

161

116264

2

117998

4

118142

4

119339

2

119746

2

120475

47

120920

100

AN5-10A

Purchased

No

250

Each

358.0000

10

10

AN5-10A

Bolt

**

JB

Location

Loc Qty

Loc Code

ST337

358

118191

80

120630

30

120717

50

120770

198

120717

AN5-32A

Purchased

No

250

Each

248.0000

4

4

AN5-32A

Bolt

**

JB 12/05/11

Location

Loc Qty

Loc Code

ST339

248

119328

93

119862

50

120423

75

120910

30

119328

March-22-12 4:33:14 PM

Shop Packet Print

Page 4

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

March-22-12 4:33:14 PM

Page 5

Work Order ID: 82114

Parent Item: D407-667-205

Parent Item Name: Crosstube Aft

82114

D407-667-205

Start Date: 22/03/2012

Required Date: 05/04/2012

Start Qty: 1.00

Required Qty: 1.00

AN5-34A
AN5-34A
Bolt

Purchased No

250 Each

70.0000

**

JB

Location

Loc Qty

Loc Code

ST339

70

119328

20

120422

50

Purchased No

250 Each

1,570.000

**

JB 12/5/011

MS21042L5
MS21042L5
Nut

Location

Loc Qty

Loc Code

ST300

1570

116105

5

116548

43

117611

42

119109

1480

119109

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

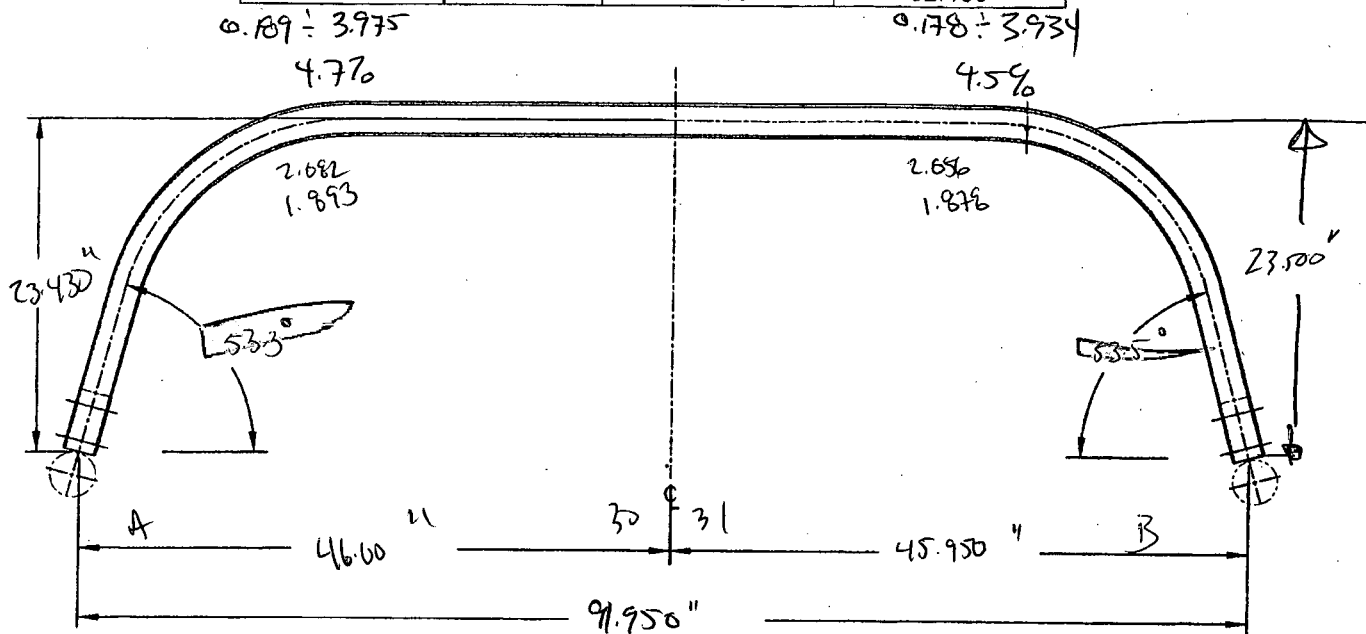
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order:	82114
Description: Crosstube High Aft (407)		Part Number:	D407-667-205
Inspection Dwg: D407-667-245 Rev: F		Page 1 of 1	

Required Dimension	Min	Max
Height	23.39	23.65
1/2 Span	45.79	46.05
Angle	54	56
Total Span	91.58	92.100



Comments
Side A = 4.7% crushing @ 32 Passes
Side B = 4.5% crushing @ 31 Passes
Acceptable CP 12.05.03 (Signature)

QC15 Inspection	S
Date	12/5/03

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	
B	09.06.22	Dwg Rev updated	KJ	
C	11.08.22	Dimensions updated	KJ	
D	11.09.30	Dimensions updated	KJ	

POSITIVE RECALL

EFFECTIVE 12.05.03 AUTH W

RELEASED 12.05.03 DATE CP

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Item	QTY -245	PART NUMBER	DESCRIPTION
1	X	D407-667-245	CROSSTUBE ASSEMBLY (407 HIGH AFT)
2	1	D6011-115	CROSSTUBE
3	2	D2856-400-773	ABRASION STRIP
4	2	D2873-043	NUT PLATE
5	2	D2873-045	NUT PLATE
6	1	D2894-1	SUPPORT
7	2	D3190-1	CHAFING SHIELD
8	2	D3595-063-430	RUBBER CUSHION
9	14	MS20601AD4W8	RIVET (OR NAS9302B-4-8)
10	4	MS21920-22	CLAMP
11	2	MS21920-25	CLAMP (OR MS21920-24)
12	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION R80-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947- 100, TYPE II, CLASS 2 ADHESIVE)

GENERAL NOTES:

- MATERIAL: MANUFACTURED FROM D6011-115
FINISHED LENGTH = 112.91±0.020
- FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- UNITS: INCHES UNLESS OTHERWISE NOTED.
- BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- IDENTIFICATION: SCRIBE DART PART NUMBER "D407-667-245" AND BATCH NUMBER ON
INSIDE OF CUFF USING VIBRATING STYLUS.
- WEIGHT: 27.7 lbs
- PART IS SYMMETRIC ABOUT CENTERLINE.
- RUN-OFF PART. BLEND OUT EDGE LONGITUDINALLY. TRANSITION SHOULD BE SMOOTH.
- BEND PROGRESSIVELY WITH A MINIMUM OF 6 PASSES. MAXIMUM TUBE FLATTENING DUE TO
BENDING IS 6% BASED ON O.D.
- LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- INSTALL D2894-1 CENTER SUPPORT USING A 0.03" TO 0.06" THICK LAYER OF MAGNOBOND
6398 PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO
PACKAGING.
- INSTALL MS21920-25 CLAMPS WITH D3595-063-430 RUBBER CUSHIONS TO SECURE D2894-1
SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE OPPOSITE CROSSTUBE
SUPPORT.
NOTE: MS21920-24 CLAMPS CAN BE USED TO ACCOMMODATE VARYING DIAMETERS.
ENSURE THERE IS A MINIMUM OF 1.5 THREADS IN SAFETY ON THE NUTS.
- EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE
OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS
SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT
LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- INSTALL D2856-400-773 ABRASION STRIP WITH A 0.13 (REF) GAP ON BOTTOM SIDE OF
CROSSTUBE. PER QSI 035.
- INSTALL D3190-1 CHAFING SHIELDS SO THAT OVERLAP IS ON BOTTOM SIDE OF CROSSTUBE
OPPOSITE D2894-1 SUPPORT.
- TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN
SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. _____

② DEO ATTACHED

RELEASED
08/11/06

F	REFORMAT NOTES TO NEW STANDARDS (ZN B8-1); RELOCATED FLAG # 6 (ZN A8-3) PER NCR 210; REMOVED REF. & ADD TOLERANCES (ZN C6-3, C4-3 & D2-3)	RF	08.11.06
E	8.02 AND 8.53 WERE 8.40 AND 8.90 (ZN D5-2); REORGANIZED VIEWS AND REFORMATED DRAWING TO CURRENT STANDARDS. REASONS: CLAMPS MOVED 0.375 TOWARD CL TO ELIMINATE INTERFERENCE WITH AIRCRAFT MOUNTS. REFERENCE: FAR#08-21 AND ECN#1225	MB	08.07.24
D	ADD VIEW FOR OEM SKID HOLES. ROTATE ORIENTATION OF CLAMPS SECTION F-F. REMOVE .851 ABRASION STRIP, ADD MAGNOBOND 6398, ADD CUSHION	PH	07.02.07
C	ADD HOLES AND NUT PLATES FOR COMPATIBILITY WITH BHT/AA SKIDTUBES	PH	05.07.26
B	ADD CHAFING SHIELD	CP	03.05.21
A	NEW ISSUE	CP	02.05.13
REV.	DESCRIPTION	BY	DATE
DESIGN	90	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	90	DRAWING NO.	REV. F
MFG. APPR.	90	D407-667-245	SHEET 1 OF 4
APPROVED	90	TITLE	SCALE
DE APPR.	90	CROSSTUBE ASS'Y (407 HIGH AFT)	NTS
DATE	08.11.06	COPYRIGHT © 2002 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

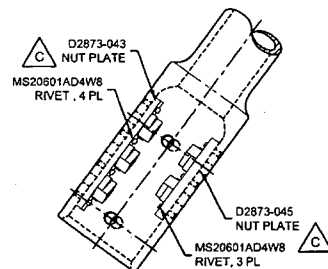
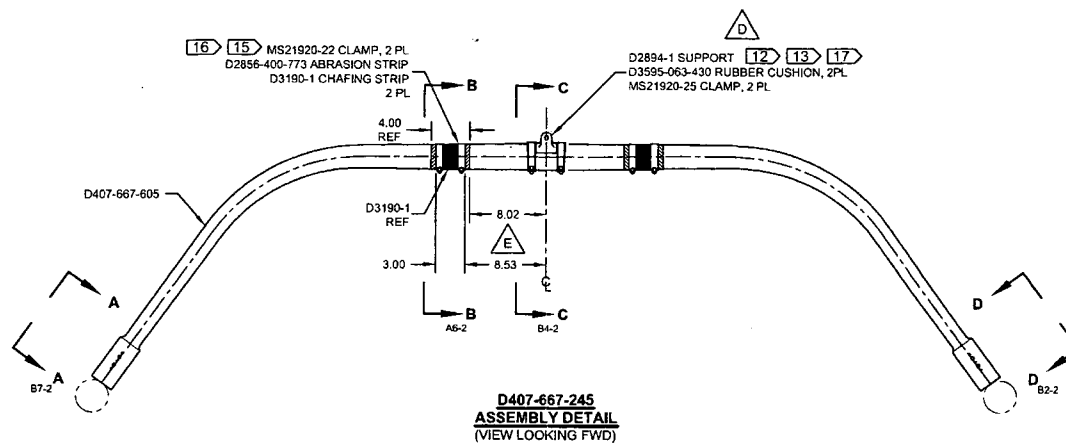
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

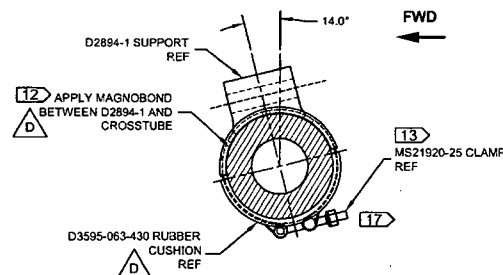
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

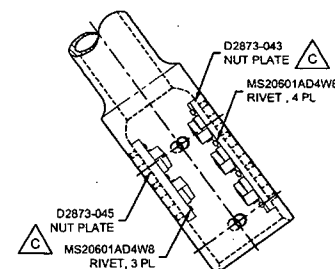
NOTE: Date & initial all entries



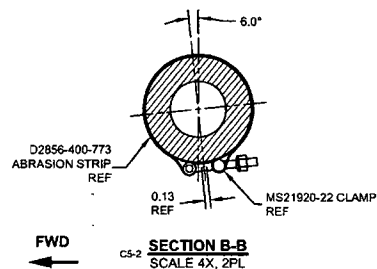
VIEW A-A CUFF DETAIL
SCALE 4X



SECTION C-C
SCALE 4X



VIEW D-D CUFF DETAIL
SCALE 4X



SECTION B-B
SCALE 4X, 2PL

② DEO ATTACHED
RELEASED
02/11/12

DESIGN	47	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	47	DRAWING NO.	REV. F
MFG. APPR.	47	D407-667-245	SHEET 2 OF 4
APPROVED	47	TITLE	SCALE
DE APPR.	47	CROSSTUBE ASS'Y (407 HIGH AFT)	NTS
DATE	08.11.06	COPYRIGHT © 2002 BY DART AEROSPACE LTD	
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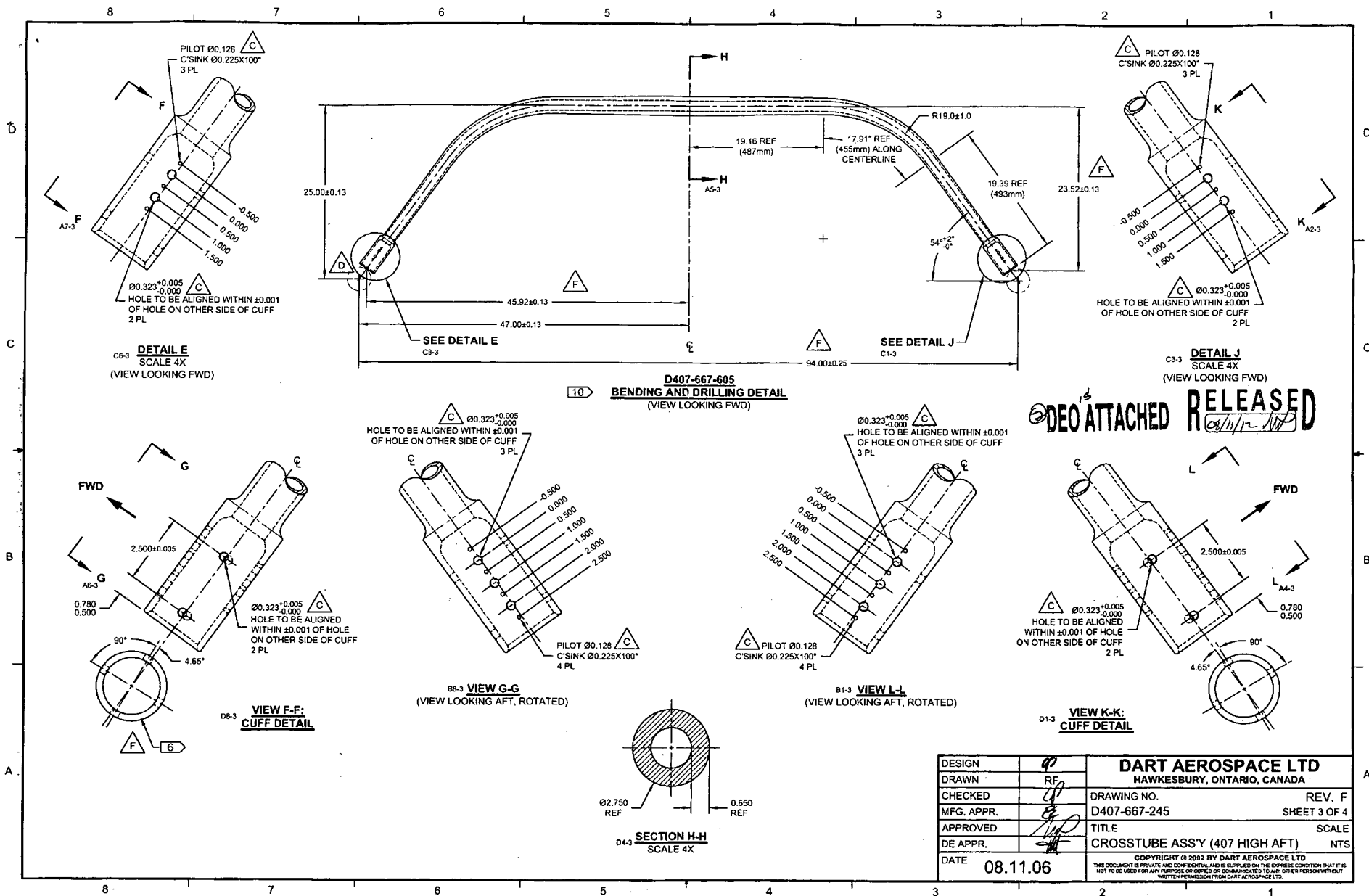
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

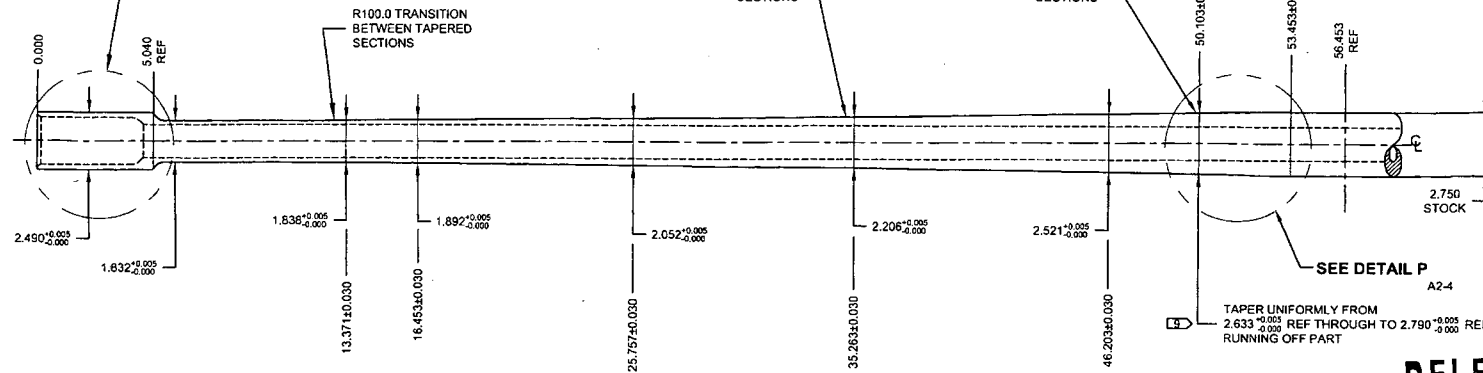
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

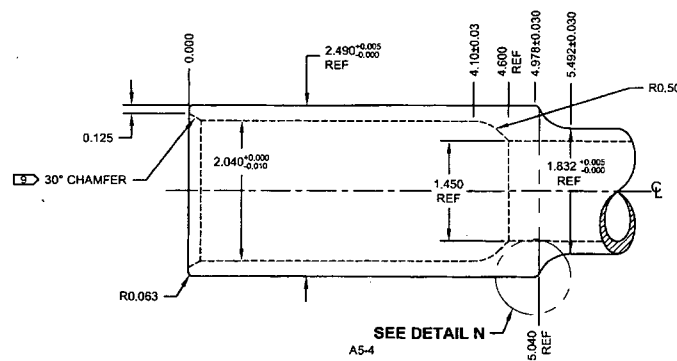
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

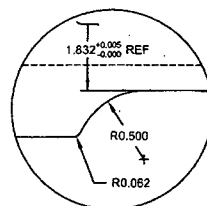
SEE DETAIL M
A7-4



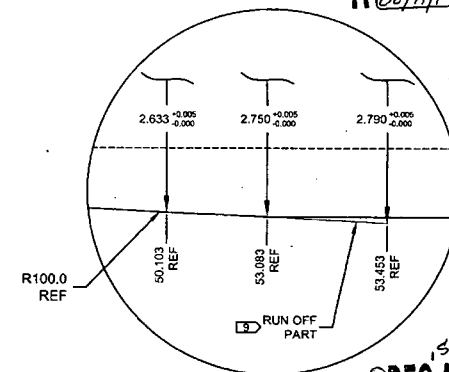
D407-667-245 MACHINING DETAIL



DETAIL M: CROSSTUBE CUFF
SCALE 3X



DETAIL N: CUFF TRANSITION
SCALE 2X



DETAIL P: TAPER RUN-OFF
NOT TO SCALE

RELEASED
08/11/12

DEO ATTACHED

DESIGN	40	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	4	DRAWING NO.	REV. F
MFG. APPR.	4	D407-667-245	SHEET 4 OF 4
APPROVED	4	TITLE	SCALE
DE APPR.	4	CROSSTUBE ASS'Y (407 HIGH AFT)	NTS
DATE	08.11.06	COPYRIGHT © 2002 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DRAWING NO. D407-667-245	TITLE CROSSTUBE ASSY (407 HIGH AFT)	REV. F	DART AEROSPACE LTD ENGINEERING ORDER		D.E.O. NO. D407-667-245-F-1	SHEET NO. SHEET 1 OF 2	SCALE NTS
DRAWN <i>[Signature]</i>	CHECKED <i>[Signature]</i>	MFG. APPR. <i>[Signature]</i>	APPROVED <i>[Signature]</i>		DE APPR. <i>[Signature]</i>		
DATE 11.04.08	DATE 11.04.12	DATE 11.04.12	DATE 11.04.12		DATE 11.04.12		

PURPOSE:

REMOVED ABRASION STRIP IN FAVOR OF A THIN LAYER OF PROSEAL 890.

CHANGE:

PARTS LIST IS AMENDED AS FOLLOWS:

IS:

Item	Qty -245	Part Number	Description
3	0	D2856-400-773	ABRASION STRIP

WAS:

3	2	D2856-400-773	ABRASION STRIP
---	---	---------------	----------------

NOTES 2 AND 15, SHEET 1 ARE AMENDED AS FOLLOWS:

IS:

- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
MASK UNDERSIDE OF CROSSTUBE AS SHOWN (HATCHED AREA) AND
PAINT OUTSIDE PER DART QSI 005 4.2
REMOVE MASKING AND APPLY CLEAR COAT
- 15) APPLY A THIN COAT OF PROSEAL 890 ON INSIDE CONCAVE SURFACE OF D3190-1
CHAFING SHIELDS AND LET CURE PER MANUFACTURER'S INSTRUCTIONS. INSTALL
PROSEAL D3190-1 CHAFING SHIELDS ONTO CROSSTUBE BY APPLYING A THIN COAT
OF PROSEAL 890 ONTO CROSSTUBE. BE SURE TO ELIMINATE ANY AIR GAPS.

WAS:

- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 15) INSTALL D2856-400-773 ABRASION STRIP WITH A 0.13 REF GAP ON BOTTOM SIDE OF
CROSSTUBE PER QSI 035.

RELEASED
2011-04-18
[Signature]

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

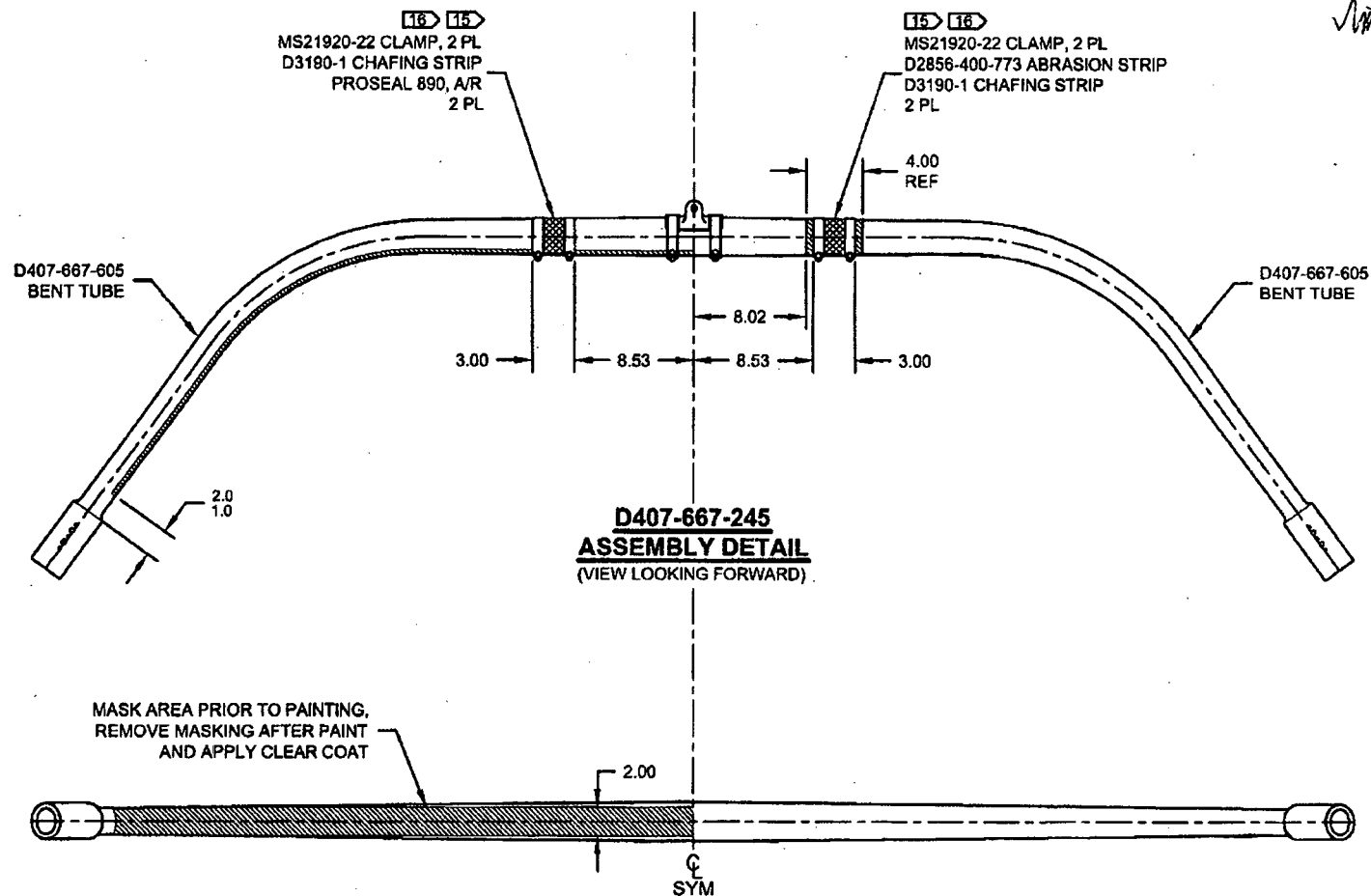
NOTE: Date & initial all entries

DRAWING NO. D407-667-245	TITLE CROSSTUBE ASSY (407 HIGH AFT)	REV. F	DART AEROSPACE LTD ENGINEERING ORDER	D.E.O. NO. D407-667-245-F-1	SHEET NO. SHEET 2 OF 2	SCALE NTS
DRAWN	CHECKED <i>UP</i>	MFG. APPR. <i>E</i>	APPROVED <i>WP</i>	DE APPR. <i>H</i>		
DATE 11.04.08	DATE 11.04.11	DATE 11.04.12	DATE 11/04/12	DATE 11-04-12		

IS:

WAS:

RELEASED
2011-04-18
WP



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DRAWING NO. D407-667-245	TITLE CROSSTUBE ASS'Y (407 HIGH AFT)	REV. F	DART AEROSPACE LTD ENGINEERING ORDER		D.E.O. NO. D407-667-245-F-2	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN 92	CHECKED ASS	MFG. APPR. E	APPROVED MP		DE APPR. H		
DATE 11.09.07	DATE 11.09.19	DATE 11.09.19	DATE 11.09.19		DATE 11.09.19		

PURPOSE:

REPLACE MAGNOBOND WITH 3M DP460 SCOTCH-WELD EPOXY ADHESIVE

CHANGE:

IS:

Item	Qty -245	Part Number	Description
12	A/R	SCOTCH-WELD DP460	EPOXY ADHESIVE, 3M SCOTCH-WELD

WAS:

12	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)
----	-----	----------------	---

NOTE 12 & 17, SHEET 1 IS AMENDED AS FOLLOWS:

IS:

- 12) INSTALL D2894-1 CENTER SUPPORT USING A 0.04" TO 0.07" THICK LAYER OF SCOTCH-WELD DP460 PER QSI 015. LET CURE FOR 24 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING. PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER ADHESIVE HAS CURED FOR 24 HOURS.

WAS:

- 12) INSTALL D2894-1 CENTER SUPPORT USING A 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

RELEASED
2011-09-29
MP

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



LIQUID PENETRANT TEST REPORT

P-05648

PAGE 1 OF 1
TIME AM ☒ PM ☐

CLIENT DART AEROSPACE DATE MAY-04-2012
ATTENTION LYNDA, CHANTAL, MATT ACUREN JOB NO. 188-12-C0121
ADDRESS 1270, ABERDEEN ST. POWO NO. 16903
HAUKES BURY WORK LOCATION AS ADDRESS
PROJECT (PT) WET FLUORESCENT LIQUID PENETRANT INSPECTION ON 8 "CROSSTUBE" 1X EXHAUST FUEL ACCEPTANCE STD. ASTM 1417/45238 REV./DATE 2005
ITEM(S) EXAMINED - SEE BELOW ELX TUBE

JOB DESCRIPTION PROCEDURE NO. LT 002 REV./DATE 2009 TECHNIQUE NO. LT 002 REV./DATE 2009
PART NO. MATERIAL Aluminum/SAS THICKNESS N/A
SCOPE PERFORMED A WET FLUO LPE ON 100% OF THE EXTERNAL SURFACE ON ITEMS MENTIONED BELOW

TEST DETAILS

METHOD ☒ FLUORESCENT ☐ VISIBLE ☐ WATER WASH ☐ SOLVENT REMOVABLE ☐ POST EMULSIFIED
FAMILY BRAND MAGNAFLUX BLACK LIGHT S/N 13798 OUTPUT > 1000 μ W/cm² ☐ AMBIENT < 2 fc
PENETRANT ZK-67 MINIMUM DWELL TIME 45 MIN. LIGHTING EQUIP. ☐ FLASHLIGHT ☐ TROUBLELIGHT ☐ OUTPUT > 100 fc @ SURFACE
PENETRANT REMOVER H2O MINIMUM DRY TIME >10 MIN. OTHER
DEVELOPER SKD-52 MINIMUM DWELL TIME 30 MIN. LIGHT METER S/N 1098866 CAL DUE DATE 01/28/12
DEVELOPER TYPE ☒ NON AQUEOUS ☐ AQUEOUS ☐ DRY

TEST SURFACE

SURFACE CONDITION ☐ AS GROUND ☐ AS WELDED ☐ MACHINED ☐ SHOT BLASTED ☒ CLEAN BARE METAL
SURFACE TEMPERATURE ☐ < -4°C/ 20°F ☐ -4°C/ 20°F TO 10°C/ 50°F ☒ 10°C/ 50°F TO 52°C/ 125°F ☐ > 52°C/ 125°F

RESULTS- (☐ METRIC ☐ IMPERIAL)

1	FITTING BIRD W.O.I.D	83249	✓	ITEM ID	D4137-1 REVID PRELIM
2	TUBE W.O.I.D	83735	✓	ITEM ID	D4138-1 REVID PRELIM
3	CROSSTUBE FWD W.O.I.D	83703	✓	ITEM ID	D206-667-101
4	" FWD W.O.I.D	83702	✓	ITEM ID	D206-667-101
5	" FWD W.O.I.D	83709	✓	ITEM ID	D407-667-105
6	" FWD W.O.I.D	82728	✓	ITEM ID	D407-667-105
7	" AFT W.O.I.D	83184	✓	ITEM ID	D412-664-203
8	" AFT W.O.I.D	83185	✓	ITEM ID	D412-664-203
9	" AFT W.O.I.D	82114	✓	ITEM ID	D407-667-205
10	" AFT W.O.I.D	82113	✓		

NO RELEVANT INDICATION WAS DETECTED AS PER

APPLICABLE STANDARD

Scope of Services

The agreement of Acuren Group Inc. to perform services extends only to those services provided for in writing. Under no circumstances shall such services extend beyond the performance of the requested services. It is expressly understood that all descriptions, comments and expressions of opinion reflect the opinions or observations of Acuren Group Inc. based on information and assumptions supplied by the owner/operator and are not intended nor can they be construed as representations or warranties. Acuren Group Inc. is not assuming any responsibilities of the owner/operator and the owner/operator retains complete responsibility for the engineering, manufacture, repair and use decisions as a result of the data or other information provided by Acuren Group Inc. In no event shall Acuren Group Inc.'s liability in respect of the services referred to herein exceed the amount paid for such services.

Standard of Care

In performing the services provided, Acuren Group Inc. uses the degree, care and skill ordinarily exercised under similar circumstances by others performing such services in the same or similar locality. No other warranty, expressed or implied, is made or intended by Acuren Group Inc.

SIGNATURES

CLIENT REPRESENTATIVE Matthew Murdock DTR # E84955
TECHNICIAN (SIGNATURE): YES (BRSICK) SIGNATURE
NAME (PRINT): YES (BRSICK) 1ST TECHNICIAN
CGSB LEVEL 2 SNT LEVEL 2 CGSB LEVEL — SNT LEVEL —
CGSB REG. NO. 3049 CGSB REG. NO. —

WHITE - CLIENT COPY

CANARY - OFFICE COPY

PINK - TECHNICIAN COPY

GOLD - OFFICE COPY



ACUREN

Daily Time Report

E-84955

Form dated September 2010

Client:

Contact:

Location:

Description:

Report #'s:

JART AEROSPACE
LYNDA, CHASTAC, MATT
1370 ABERDEEN ST., HAWKSBURY, ON
PT WET FLUO
P-05648

Job #:

Day:

P.O. #:

Vehicle #

Sun

Mon

Tues

Date:

Wed

Thurs

Fri

Sat

W.O. #:

Camera #:

MAY 04 2012
188-12-00121

Name	Specialist	Tech.	CEDO	Assistant	Start Time	Total Hours			KM	LOA (✓) ONLY	OTM (✓) ONLY	Labour Agreement (if known) or type of work	TLD No.	Daily DRD Readings
						Travel	Worked	SP						
<u>VES DESROZES</u>		<input checked="" type="checkbox"/>			<u>6:00</u>	<u>3 1/2</u>	<u>3 1/2</u>		<u>230</u>	<input type="checkbox"/>	<input type="checkbox"/>		<u>854896</u>	<u>—</u>
					AM					<input type="checkbox"/>	<input type="checkbox"/>			
					PM					<input type="checkbox"/>	<input type="checkbox"/>			
					AM					<input type="checkbox"/>	<input type="checkbox"/>			
					PM					<input type="checkbox"/>	<input type="checkbox"/>			
					AM					<input type="checkbox"/>	<input type="checkbox"/>			
					PM					<input type="checkbox"/>	<input type="checkbox"/>			
					AM					<input type="checkbox"/>	<input type="checkbox"/>			
					PM					<input type="checkbox"/>	<input type="checkbox"/>			
					AM					<input type="checkbox"/>	<input type="checkbox"/>			
					PM					<input type="checkbox"/>	<input type="checkbox"/>			
					AM					<input type="checkbox"/>	<input type="checkbox"/>			
					PM					<input type="checkbox"/>	<input type="checkbox"/>			

WELD INSPECTION SUMMARY

Weld Diameter										Long Seam				Circ. Seam				
Schedule/Thickness										Thickness				Thickness				
Quantity										Lineal Ft.				Lineal Ft.				

Film:

Pcs. 2 1/4 x 17"

Pcs. 3 1/2 x 17"

Pcs. 4 1/2 x 17"

Pcs. 14" x 17"

Pcs.

Consumables

(cans / litres):

UT

3

PT

MT

Re-billable expenses:

Equipment charges:

Client Representative:

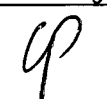
Martin Murdoch

ACUREN 1-877-299-2857

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 Cantley, QC (819) 360-0685 • Fax (819) 827-3513
 Cornwall, ON (613) 931-1261 • Fax (613) 931-2777
 Gaspé, QC (418) 392-3618 • Fax (418) 392-4114
 Halifax, NS (902) 443-4448 • Fax (902) 445-5090
 Jonquiere, QC (418) 542-8273 • Fax (418) 542-5494
 Mississauga, ON (905) 673-9899 • Fax (905) 673-8394
 Montreal, QC (450) 492-3399 • Fax (450) 492-5682
 North Bay, ON (705) 840-8107 • Fax (705) 476-6683
 Oakville, ON (905) 825-8595 • Fax (905) 825-8598
 Pickering, ON (905) 839-0015 • Fax (905) 839-5641
 Port Elgin, ON (519) 389-6797 • Fax (519) 389-6799
 St. John's, NL (709) 753-2100 • Fax (709) 753-7011
 Sarnia, ON (519) 336-3021 • Fax (519) 336-8220
 Sherbrooke, QC (819) 620-5456 • Fax (819) 346-6828
 Sudbury, ON (705) 522-1849 • Fax (705) 522-9926
 Thunder Bay, ON (807) 475-4240 • Fax (807) 577-2017
 Timmins, ON (705) 365-8313 • Fax (705) 267-2855
 Val D'Or, QC (819) 856-6789 • Fax (819) 825-9564

NOTES:

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
12.05.03	200/ 210	Apply clear coat to entire of outside surface of crutch, except mask off area of support.				 12.05.04 PS1042	

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

5.0 PARTS LIST

5.1 HIGH GEAR CROSSTUBES

Item	Qty -101	Qty -201	Qty -103	Qty -203	Qty -105	Qty -205	Part Number	Description
	X						D206-667-101	CROSSTUBE INSTALLATION, 206A/B HIGH FWD
		X					D206-667-201	CROSSTUBE INSTALLATION, 206A/B HIGH AFT
			X				D206-667-103	CROSSTUBE INSTALLATION, 206L/L-1/L-3/L-4 HIGH FWD
				X			D206-667-203	CROSSTUBE INSTALLATION, 206L/L-1/L-3/L-4 HIGH AFT
					X		D407-667-105	CROSSTUBE INSTALLATION, 407 HIGH FWD
						X	D407-667-205	CROSSTUBE INSTALLATION, 407 HIGH AFT
1	1						D206-667-141	CROSSTUBE ASSEMBLY, 206A/B HIGH FWD
2		1					D206-667-241	CROSSTUBE ASSEMBLY, 206A/B HIGH AFT
3			1				D206-667-143	CROSSTUBE ASSEMBLY, 206L/L-1/L-3/L-4 HIGH FWD
4				1			D206-667-243	CROSSTUBE ASSEMBLY, 206L/L-1/L-3/L-4 HIGH AFT
5					1		D407-667-145	CROSSTUBE ASSEMBLY, 407 HIGH FWD
6						1	D407-667-245	CROSSTUBE ASSEMBLY, 407 HIGH AFT
10	*2	*2	*2		*2		D2891-1	SUPPORT
11				*2			D2892-1	SUPPORT
12						*1	D2894-1	SUPPORT
13	*4	*4	*4		*4		D3595-063-395	RUBBER CUSHION
14				*4			D3595-063-450	RUBBER CUSHION
15						*2	D3595-075-430	RUBBER CUSHION
16	*4	*4	*4		*4		MS21920-20	CLAMP
17				*4		*4	MS21920-22	CLAMP
18						*2	MS21920-25	CLAMP (OR MS21920-24)
19	4	4	4		4		AN5-32A	BOLT
20				4		4	AN5-34A	BOLT
21	4	4	4	4	4	4	MS21042L5	NUT (OR MS21042-5)
22	8	8	8	8	8	8	NAS1149C0563J	WASHER (OR AN960JD516)
23						*2	D3190-1	CHAFING SHIELD
40	*2		*2	*2	*2	*2	D2873-043	NUT PLATE
41	*2		*2	*2	*2	*2	D2873-045	NUT PLATE
42		2					D2872-043	NUT PLATE
43		2					D2872-045	NUT PLATE
44	10		10				AN5-7A	BOLT
45		10		10	10	10	AN5-10A	BOLT
46	4	10	4		4		AN5-30A	BOLT
47				4		4	AN5-32A	BOLT
48			12				AN970-4	WASHER (OPTIONAL)
49		6					MS21042L5	NUT (OR MS21042-5)
50	10	12	10	10	10	10	NAS1149C0563J	WASHER (OR AN960JD516)
60		1					D3039-3	CENTER DRILL (TOOLING, NOT INSTALLED)

*REFERENCE ONLY. PARTS ARE INCLUDED IN D206-667-141/-143/-241/-243 & D407-667-145/-245
ASSEMBLIES ABOVE

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Revision: D
Date: 11.05.01

